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BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

EXAMINER
YUEN, KAN

ART UNIT	PAPER NUMBER
2416	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/766,282	GUNTURI ET AL.
Office Action Summary	Examiner	Art Unit	
	KAN YUEN	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on <u>20 June 2008</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-18</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-18</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 08-06)   **Office Action Summary**   Part of Paper No./Mail Date 20081007

Response to Arguments

1.   Applicant's arguments, see remark, filed on 6/20/2008, with respect to the

rejection(s) of claim(s) 1-18 under 103 rejections have been fully considered and are

persuasive. Therefore, the rejection has been withdrawn. However, upon further

consideration, a new ground(s) of rejection is made in view of Fetehi et al. (Pat No.:

6600583).

Specification Objection

2.   The following guidelines illustrate the preferred layout for the specification of a
utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should
include the following sections in order. Each of the lettered items should appear in
upper case, without underlining or bold type, as a section heading. If no text follows the
section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
        DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A
        COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
        (1) Field of the Invention.
        (2) Description of Related Art including information disclosed under 37
        CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

> (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A
> "Sequence Listing" is required on paper if the application discloses a
> nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if
> the required "Sequence Listing" is not submitted as an electronic
> document on compact disc).

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

In claim 1, lines 2-4, the phrase "registering, in response to an instruction

included in source code for an upstream component ..." is considered to be vague. The

claim did not specifically point out whether source code is being sent to the upstream

component or it is being sent from the upstream component. In this office action, the

Examiner interprets the source code is being sent from the upstream component.

Claim Rejections - 35 USC § 101

4.   Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is

directed to non-statutory subject matter.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine,

manufacture, or composition of matter, or any new and useful improvement
thereof, may obtain a patent therefor, subject to the conditions and requirements
of this title.

Claim 10 is rejected under 35 U.S.C. 101 because the term "computer readable

medium" is not support by the specification. Based on the broadest reasonable

interpretation, the computer readable medium can be signal or carrier waves, which are

considered non-statutory subject matter. For further information on statutory computer

type claims, see MPEP section 2100. When nonfunctional descriptive material is

recorded on some computer-readable medium, in a computer or on an electromagnetic

carrier signal, it is not statutory since no requisite functionality is present to satisfy the

practical application requirement.

Claim Rejections - 35 USC § 103

5.　　　The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.　　Determining the scope and contents of the prior art.
2.　　Ascertaining the differences between the prior art and the claims at issue.
3.　　Resolving the level of ordinary skill in the pertinent art.
4.　　Considering objective evidence present in the application indicating
　　　obviousness or nonobviousness.

6.　　　The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1-5, 7, 8, 10-14, 16, 17 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Kuo et al. (Pub No.: 2003/0021230) in view of Fatehi et al. (Pat No.:

6600583).

For claim 1, Kuo et al. disclosed the method of registering, a procedure (flow

control protection) at a downstream component (fig. 1, VQM 106 and Traffic Manager

110) in a packet processing pipeline, the procedure being associated with at least one

event (Kuo et al. see paragraphs 0030 and 0047, fig. 1). The switching apparatus 102

implements flow control to protect the one or more virtual queues within the receive-side

VQM 106 from over-flowing;

processing a received packet at the upstream component (fig. 1, switching node

102, and VQM 104) executing on a first engine (fig. 1, scheduler 114, paragraph 0029-

0030); processing the packet at the downstream component executing on a second

engine (fig. 1, Flow Control Manager 116) after the processing of the received packet at

the upstream component (paragraph 0033). The flow control manager 116 can be

located anywhere in the switch system 100, thus flow control manager 116 can be

located in VQM 106 or Traffic Manager 110 and be treated as second engine; the

processing at the downstream component comprising:

determining occurrence of the at least one associated event at the downstream

component; and in response, executing the registered procedure at the second engine

(Kuo et al. see paragraphs 0030-0033, fig. 1). When a particular virtual queue of the

VQM 106 becomes filled with traffic to nearly full capacity, then the flow control

manager 116 is informed by the VQM 106 or Traffic Manager 110 of the need for flow control by using a feedback. The flow control 116 interacts with scheduler 114 to stop or reduce the transmission rate for packet transfer to that queue. Thus, the detection of filled queue is considered as one event. The high and low threshold levels are the procedure to be executed to monitor the level in the queues. Once any queue exceeds the limits, a feedback communicated from the flow control 116 to the scheduler is communicated.

However, Kuo et al. did not disclose the feature of registering a procedure, in response to an instruction included in source code for an upstream component. Fatehi et al. from the same or similar fields of endeavor teach the feature of registering a procedure, in response to an instruction included in source code for an upstream component (Fatehi et al. column 4, lines 54-67, column 5, lines 1-58). The source router R1 sends a tag command message TI to a downstream router R2, indicating the routing of the packets P1-PN to destination router R4. The tag command message T1 is considered as the source code and the indication of packet routing contains in the command is the instruction, wherein the instruction is the same as procedure.

Thus, it would have been obvious to the person of ordinary skill in the art at the time of the invention to use teaching as taught by Fatehi et al. in the network of Kuo et al. The motivation for using the teaching being that it provides the tag can be generated in the optical domain and applied at the intermediate routers without conversion.

Regarding claims 2, 11 Kuo et al. disclosed the feature wherein the first engine and second engine comprise engines integrated on the same semiconductor die (Kuo et

al. paragraph 0033). The flow control 116 and the scheduler 114 is located on the same

processor, thus, they are integrated on the same semiconductor die.

Regarding claims 3, 12 Kuo et al. disclosed the feature wherein the first engine

and the second engine comprise multi-threaded engines (Kuo et al. see paragraph

0030-0033). The both engines can be operating can be communicated bi-directionally,

thus they are multi-threaded engines.

Regarding claims 4, 13 Fatehi et al. disclosed the feature wherein the

procedure comprises a procedure that alters data structures defined by the upstream

component (Fatehi et al. column 5, lines 25-35). Source router R1 sends a tag

command to router R2 indicating the change of routing of packets from destination

router R2 to R6.

Regarding claims 5, 14 Kuo et al. disclosed the feature wherein the upstream

component and downstream component comprise at least one of: adjacent components

in the pipeline and non-adjacent components in the pipeline (Kuo et al. see paragraphs

0027-0029, fig. 1, traffic manager 110).

Regarding claims 7, 16 Kuo et al. disclosed the feature wherein the registering

comprises loading instructions for the procedure into the second engine (Kuo et al. see

paragraphs 0030 and 0047, fig. 1). The threshold levels are implemented or loaded into

the flow control 116.

Regarding claims 8, 17 Kuo et al. disclosed the feature wherein the registering

comprises registering the procedure with an event handler that invokes registered

procedures in response to events signaled by the downstream component (Kuo et al.

see paragraphs 0030-0033, fig. 1). When a particular virtual queue of the VQM 106

becomes filled with traffic to nearly full capacity, then the flow control manager 116 is

informed by the VQM 106 of the need for flow control by using a feedback. The flow

control 116 interacts with scheduler 114 to stop or reduce the transmission rate for

packet transfer to that queue. Thus, the detection of filled queue is considered as one

event. The high and low threshold levels are the procedure to be executed to monitor

the level in the queues. Once any queue exceeds the limits, a feedback communicated

from the flow control 116 to the scheduler is communicated.

      Claim 10 is rejected similar to claim 1.

8.   Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kuo et al. (Pub No.: 2003/0021230) in view of Fatehi et al. (Pat No.: 6600583) as

applied to claim 6 above, and further in view of Johnson et al. (Pat No.: 6920146).

      For claim 6, 15 Kuo et al. and Fatehi et al. both did not disclose the feature

wherein the registering comprises one of: run-time registering and compile-time

registering. Johnson et al. from the same or similar fields of endeavor teach the feature

wherein the registering comprises one of: run-time registering and compile-time

registering (Johnson et al. see paragraph 0040, lines 1-6). Thus, it would have been

obvious to the person of ordinary skill in the art at the time of the invention to use the

feature as taught by Johnson et al. in the network of Kuo et al. and Fatehi et al. The

motivation for using the feature being that the system increases the speed of

registering.

9.   Claims 9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kuo et al. (Pub No.: 2003/0021230) in view of Fatehi et al. (Pat No.: 6600583) as

applied to claim 1 above, and further in view of Drort et al. (Pub No.: 2003/0193953).

     For claims 9, 18 Kuo et al. and Fatehi et al. both did not disclose the feature of

wherein the packet processing pipeline comprises at least one of the following: an IPv4

packet processing pipeline, an IPv6 packet processing pipeline, and an Asynchronous

Transfer Mode (ATM) packet processing pipeline. Drort et al. from the same or similar

fields of endeavor teach the feature wherein the packet processing pipeline comprises

at least one of the following: an IPv4 packet processing pipeline, an IPv6 packet

processing pipeline, and an Asynchronous Transfer Mode (ATM) packet processing

pipeline (Drort et al. see paragraph 0026, lines 10-25). Thus, it would have been

obvious to the person of ordinary skill in the art at the time of the invention to use the

feature as taught by Drort et al. in the network of Kuo et al. and Fatehi et al. The

motivation for using the feature being that the system will improve the system resources

such as bandwidth availability.

Examiner's Note:

10.   Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAN YUEN whose telephone number is (571)270-1413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art
Unit 2616

KY